CLAIMS:

1. A system comprising:

a primary loop including,

a first oil lubricated compressor configured to raise the pressure of a gas mixture flowing through the primary loop,

an oil separator configured to separate oil contaminant from the gas mixture,

a valve configured to return the separated oil back to the first oil compressor when the valve is in an open state,

at least one heat exchanger, and

a first expansion element; and

a secondary loop including a primary/secondary heat exchanger, the primary/secondary heat exchanger also forming a part of the primary loop;

wherein the gas mixture includes constituents (i) that function as a solvent of the oil contaminant which fail to be separated from the refrigerant by the oil separator and (ii) that at least substantially condense in the primary/secondary heat exchanger.

2. The system of claim 1, wherein the constituents of the gas mixture include R116.

3. The system of claim 1, wherein the gas mixture has a freezing point below lowest predetermined temperature of the primary loop.

4. The system of claim 1, further comprising a probe.

5. The system of claim 1, wherein the valve is a solenoid valve.

6. The system of claim 1, further comprising means for controlling when the valve is open.

7. The system of claim 4, wherein the probe comprises a device designed for single use, intrauterine placement, and tissue ablation.

8. A method comprising the steps of:

providing a dual loop cooling system including a primary compressor operating on a primary loop, a secondary compressor operating on a secondary loop, and a primary/secondary heat exchanger shared by both the primary and secondary loop;

starting operation of the secondary compressor in order to bring the primary/secondary heat exchanger to a predetermined operating temperature; and

starting operation of the primary compressor after the primary/secondary heat exchanger has reached its predetermined operating temperature.

9. The method of claim 8, further comprising the step of using refrigerant including R116.

10. A system comprising:

an oil lubricated compressor configured to raise the pressure of a gas mixture;

an oil separator configured to separate oil contaminant from the gas mixture;

a first valve configured to return the separated oil back to the oil compressor when the valve is in an open state;

a condensor configured to change the phase of the gas mixture from vapor to a vapor and liquid combination;

a phase separator configured to separate the liquid from the vapor; and

a probe including a first heat exchanger and a second heat exchanger;

wherein the gas mixture includes constituents (i) that function as a solvent of the oil contaminant which fail to be separated from the gas mixture by the oil separator and (ii) that at least substantially condense in the first heat exchanger.

11. The system of claim 10, wherein the constituents of the gas mixture include R116.

12. The system of claim 10, wherein the gas mixture has a freezing point below lowest predetermined temperature of the pre-cooler.

13. The system of claim 10, further comprising a line and a console,

wherein the line connects the probe and the console and the console includes the oil compressor, the oil separator, the valve, the condensor, and the phase separator.

14. The system of claim 13, wherein the line is not insulated.

15. The system of claim 10, wherein the first valve is a solenoid valve.

16. The system of claim 10, further comprising means for controlling when the valve is open.

17. The system of claim 10, wherein the phase separator operates at room temperature.

18. The system of claim 10, further comprising a second valve situated between the phase separator and the probe, and configured to pass the vapor when in an open state to allow operation of the first heat exchanger without simultaneous operation of the second heat exchanger.

19. The system of claim 10, wherein the probe comprises a device designed for single use, intrauterine placement, and tissue ablation.

20. Method for manufacturing a cryosurgical system, comprising:

providing at least one oil compressor including a primary compressor;

vacuum baking the primary compressor without any oil therein at a predetermined temperature for a predetermined time period; and

assembling the cryosurgical system including the baked primary compressor.

21. The method of claim 20, wherein the predetermined temperature is 125 degrees Celsius.

22. The method of claim 20, wherein the predetermined time period is approximately one week.

23. A method comprising the steps of:

providing a single compressor cooling system including,

a first heat exchanger,

a second heat exchanger,

a condenser configured to change the phase of a gas mixture from vapor to a vapor and liquid combination, and

a phase separator connected to the compressor via the condenser, configured to separate the liquid from the vapor, and including a vapor outlet and a liquid outlet,

wherein the first heat exchanger is connected to both the vapor outlet and the liquid outlet of the phase separator, the second heat exchanger is connected to the vapor outlet after the first heat exchanger, and a control valve is situated between the phase separator and the first heat exchanger on the vapor outlet;

closing the control valve and starting operation of the compressor in order to bring the first heat exchanger to a predetermined operating temperature using the liquid from the liquid outlet; and

opening the control valve after the closing step in order to allow flow of the vapor through the first and second heat exchangers.

24. The method of claim 23, further comprising the step of using gas mixture including R116.

25. The method of claim 23, wherein the providing step includes the step of providing an oil separator and a return valve, the oil separator connected between the compressor and the condenser, the return valve connected to an outlet of the oil separator and an inlet of the compressor.